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Title : NOCTURNAL LOCATION AND MOVEMENTS OF PACIFIC COAST BOTTLENOSE DOLPHINS DETERMINED BY A SONOBUOY ARRAY.

Category : Behavior

Student : M.A./M.S.

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Abstract : Prior research suggests that Pacific coast bottlenose dolphins (Tursiops truncatus) move offshore at dusk, presumably to feed, and are most often found inshore near the surf line at dawn (Hanson and Defran 1993, Ward 1998, Day 1998). The purpose of this research was to more precisely document their location and movements during nocturnal hours. A sonobuoy array was deployed in a triangle configuration centered approximately 500 m from the mean low-low water line at Torrey Pines State Beach, CA. Sonobuoys were monitored for 11 nights between October 1999 and November 1999, and for 21 nights between August 2000 and December 2000. Dolphin vocalizations were detected on 28 of 33 nights (85%) but were located on 18 nights (54%) due to equipment difficulties or insufficient vocalization amplitude. Vocalizations were located up to 2 km north and 1.5 km south of the center of the array. The furthest offshore vocalization was located 1.4 km offshore. Movement data was derived from vocalization bouts greater than 30 min in duration. During these bouts dolphins moved north more often than south (Chi-square = 5.4, $p<0.025$, df=1). There were more bouts moving inshore after 0500 PDT than before 0500 PDT (Fisher's exact test, p=0.0304, df=1). Movement speed from the middle of the night (0200 - 0500 PDT) was slower than during the post dusk (2200 - 0200 PDT) and pre-dawn periods (500 - 0700 PDT) (Mann Whitney W=16.5, p=0.0038). In the aggregate, these findings are consistent with the hypotheses that Pacific coast bottlenose dolphins move offshore at night, compared to their daytime range, to feed on nocturnally active prey and return inshore during the early morning hours.